Key Curriculum Press

Discovering Geometry: An Investigative Approach

Correlations available at www.keypress.com/kentucky. Discovering Geometry helps students internalize geometric properties as they test their reasoning with physical models. The developmental focus of Discovering Geometry will help you meet your students where they are and guide them all to a high level of understanding. You'll find many opportunities both to support students whose progress is slower and to challenge more advanced students. Michael Serra's extensive classroom experience helped him shape a new approach to teaching geometry. Now in its fourth edition, Discovering Geometry has proven effective in countless classrooms across the country.

Teacher Edition

Essential Items

Ancillary Items

Free with Purchase items

ISBN
9781559538824

Contract Price
$63.95

Grade
8, 9, 10

TYPE
P1

Author
Michael Serra

Edition
4th

Content
270233-Geometry

Readability
Lexile 1000

Accessibility
Nimas

Research
Contact Alicia Hill at
800-995-6284 ext. 205

Provided by the Publisher

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Discovering Geometry: An Investigative Approach		
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Copyright - 2008	Edition - 4th	Readability - Lexile 1000
Course - 270233-Geometry		Grade(s) - 8, 9, 10
Teacher Edition ISBN if applicable 9781559538831		

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Overall Recommendation: **Recommended as BASAL**

if this box is not checked, the evaluators have chosen NOT recommend as basal

Overall Strengths, Weaknesses, Comments:

The textbook uses an inquiry-based approach to geometry that facilitates generalization and other critical-thinking skills. A large number of extensions are provided for more advanced students, also. The use of informal and flow-chart proof rather than formal, two-column proof limits the desirability of the textbook in a college-prep curriculum. Otherwise, the book is an excellent choice for any geometry course, regardless of student ability levels.

NIMAC Accessibility	N	
Ancillary	No	
Free with Purchase	Yes	
Research	Yes	Contact Alicia Hill at 800-995-6284 ext. 205

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CRITERIA

This basal resource …

A. Encompasses KY Content Standards & Grade Level Expectations **Strong Evidence**

Text is designed to be used in an elective course outside the Program of Studies

1) Includes the 5 Big Ideas of mathematics to the following extent:

a) Number Properties and Operations	Strong Evidence
b) Measurement	Strong Evidence
c) Geometry	Strong Evidence
d) Data Analysis and Probability	Moderate Evidence
e) Algebraic Thinking	Strong Evidence

2) Addresses content-specific enduring understandings from the related Program of Studies standards.	Strong Evidence
3) Addresses content-specific skills and concepts from the related Program of Studies standards.	Strong Evidence
4) Content addressed is current, relevant and non-trivial	Strong Evidence
5) Provides opportunities for critical thinking/reasoning	Strong Evidence

6) Strengths, Weaknesses, Comments:

- Specific strengths-which areas/concepts are covered exceptionally well?
- Specific weaknesses-which areas/concepts would likely require supplementing?

Textbook thoroughly addresses geometry and measurement concepts from the Program of Studies. The inquiry-based approach encourages the use of critical thinking and reasoning skills.

B. Functionality & Suitability **Strong Evidence**

1) Suitability **Strong Evidence**

- Should be suitable for use with a diverse population and is free of bias regarding race, age, ethnicity, gender, religion, social and/or geographic environment; is free of stereotyping or bias of any kind.

2) Content quality **Strong Evidence**

- Free from factual errors
- Content is presented conceptually when possible—more than a mere collection of facts
- Content included accurately represents the knowledge base of the discipline
- Theories/scientific models contained represent a broad consensus of the scientific community
- Interconnections among mathematical topics

3) Connections to Literacy **Strong Evidence**

- Employs a variety of reading levels and is grade/level appropriate
- Use of multiple representations-concrete, visual/spatial, graphs, charts, etc.
- Provides opportunities for summarizing, reviewing, and reinforcing vocabulary skills and concepts at multiple levels of difficulty for a variety of learning styles.
- Student text provides opportunity to integrate reading and writing
- Uses vocabulary that is age and content appropriate
- Focuses on critical vocabulary vs. extensive lists
- Identifies key vocabulary through definitions in both text and glossary
- The text is engaging and facilitates learning
- Embedded activities enhance the understanding of the text
  Note: may apply to either student or teacher editions

4) Connections to Technology **Strong Evidence**

- Integrates technology and reflects the impact of technological advances
- Uses technology in the collection and/or manipulation of authentic data

- Embeds web links as a mathematics resource.

5) Support for Diverse Learners **Strong Evidence**

- Provides support for ESL students
- Provides support for differentiation of instruction in diverse classrooms
- Challenge for gifted and talented students
- Support for students with learning difficulties
  Note: may apply to either student or teacher editions

6) Strengths, Weaknesses, Comments:

- Reviewers may provide page numbers to point out specific strong examples for individual evaluation standards.

The inquiry-based approach encourages students to extend basic problem situations and to develop generalizations of results. Technology use (particularly Geometer's Sketchpad) is correlated to the content.

C. Supports Inquiry and Skill Development **Strong Evidence**

1) Promotes Inquiry, research and Application of Learning Strong Evidence

- Provides opportunities for inquiry and research that includes activities such as gathering information, researching resources, observing, interviewing, and evaluating information, analyzing and synthesizing data and communicating findings and conclusions, formulating authentic questions to deepen and extend mathematical reasoning.
- Requires students to use higher-level cognitive skills (analysis, synthesis, evaluation, generalizing, justifying, etc.)
- Provides activities and projects for students to deepen their knowledge and cultivate and strengthen problem-solving and decision-making skills.
- Provides opportunities for application of learned concepts.
- Uses a variety of relevant charts, graphs, diagrams, number lines, and other illustrations to invite and motivate students to engage in discussion, problem solving, and other high-order thinking skills.
- Emphasizes conceptual understandings that invite students to predict, conclude, evaluate, develop and extend ideas to support reasoning.
  Note: may apply to either teacher or student edition

2) Skill Development Strong Evidence

- Provides opportunities to make sense of all mathematics
- Provides opportunities to recognize, create, and extend patterns.
- Provides opportunities for critical thinking and reasoning.
- Provides opportunities to justify/prove responses.
- Provides opportunities to ask deeper questions.
- Contains embedded activities (or extensions) that emphasize use of technology for problem solving
  Note: may apply to either teacher or student edition

3) Strengths, Weaknesses, Comments:

Inquiry methods encourage the use of higher-level thinking skills. Several topics beyond the Program of Studies are introduced (e.g., tessellations, graph theory), allowing advanced students to explore these more advanced topics.

D. Supports Best Practices of Teaching and Learning **Strong Evidence**

1) Engages Students Strong Evidence

- Includes content geared to the needs, interests, and abilities of all students
- Engages and motivates students using components such as real-life situations, simulations, experiments, and data gathering.
- Includes information and activities that assist students in seeing relevance of concepts (where appropriate) to their own lives and experiences
- Provides a variety of strategies, activities, and materials to enhance student learning at the appropriate learning levels
- Activities are truly congruent to the concepts addressed, not merely correlated
  Note: may apply to either teacher or student edition

2) Uses Assessment to Inform Instruction Strong Evidence

- Includes multiple means of assessment as an integral part of instruction
- Provides evaluation measures in the teacher edition that supports differentiated learning activities
- Embedded assessments reflect a variety of Depth of Knowledge levels
  Note: may apply to either teacher or student edition

3) Strengths, Weaknesses, Comments:

- Reviewers may provide page numbers to point out specific strong examples for individual evaluation standards

Data-gathering and hands-on activities are embedded throughout. Applications of geometry to other fields of study are likewise provided.

E. Has an Organization/ Format that Supports Learning and Teaching **Strong Evidence**

1) Organizational Quality Strong Evidence

- Print and/or electronic materials present minimal barriers to learners, but also add encouragement for students to stretch and make further explorations.
- Presents chapters/lessons in an organized and logical sequence
- Provides clearly stated objectives for each lesson.
- Uses text features (e.g., titles, headings, subheadings, review questions, goals, objectives, space, print, type size, color) to enhance readability.
- Makes use of various forms of media (e.g., CD's, recordings, videos, cassette tapes, computer software, web-based components, interactive software, calculators, physical and virtual manipulatives) as either student or teacher resources
- Includes clear, accurate, appropriate and clearly explained illustrations and/or graphics that reinforce content standards.
- Incorporates a glossary, footnotes, recordings, pictures, and/or tests that aid pupils and teachers

in using the book effectively
- Uses grade-appropriate type size
- Included media are durable, easy to use and have technical merit
- Construction appears to be durable and able to withstand normal use

2) Essential Components (beyond student and teacher text) Little or No Evidence

- Items identified as essential components support the learning goals and concept coverage of the basal

3) Strengths, Weaknesses, Comments:
- Reviewers may provide page numbers to point out specific strong examples for individual evaluation standards.

Book is well-organized, with specific objectives for each topic. Graphics and illustrations enhance the written content.

F. Has available Ancillary/ Gratis Materials

Note: The decision whether to recommend or not recommend this resource as a basal should not be influenced by Section F

Moderate Evidence

1) Ancillary/Gratis Materials
- Coordinates teacher resources easily with student material (e.g., accompaniments included, student pages shown, instructional technology indicated).
- Are well-organized and easy to use
- Provide substantive learning opportunities and are congruent with student learning goals
- Provide opportunities for high-level thinking, assessment, and/or problem solving
- Provides opportunities for intervention.

2) Strengths, Weaknesses, Comments:
- Reviewers may provide page numbers to point out specific strong examples for individual evaluation standards.

Ancillary materials include extra practice problems and some additional extension projects, the quality of which is excellent. Few materials are included for the struggling student.